

SDI: A STRATEGY FOR PEACE AND STABILITY OR THE END TO DETERRENCE?

by

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Since the advent of the nuclear age, humanity has existed and "progressed" in a politico-military climate increasingly threatened by the possibility of instant annihilation. The prevailing condition now is one in which two superpowers possess and control the means, many times over, to terminate life as we know it on this planet. The nuclear capacities of the United States and the Soviet Union alone equate to roughly two and one half tons of dynamite for each person on the earth.¹ In this bipolar world, in which the antithetical political ideologies of the two superpowers continually and almost daily conflict with each other at varying levels of intensity, a state of mutual nuclear fear has also existed. Although it cannot be empirically proven, it appears that this state of mutual fear (i.e. the fear that one nation would inflict a nuclear counterstrike of unacceptably devastating proportion against the other, should the other strike first) has successfully ensured that to date these weapons of mass destruction have not been used to settle political differences. This threat of retaliation, in several variations, has become the bedrock of a general philosophy (I hesitate to say strategy) referred to as "deterrence."

Taking issue with the philosophy that the only way to deter a potential adversary from using his nuclear means is to threaten him with one's own, along with a relative assurance that the retaliation would cause

unacceptably high levels of physical destruction to the adversary, President Reagan proposed the following in 1983:

Let me share with you a vision of the future which offers hope. It is that we embark on a program to counter the awesome Soviet missile threat with measures that are defensive. Let us turn to the very strengths in technology that spawned our great industrial base and that have given us the quality of life we enjoy today. What if free people could live secure in the knowledge that their security did not rest upon the threat of instant U.S. retaliation to deter a Soviet attack, that we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies? . . . I call upon the scientific community in our country, those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete.²

This speech suggested the possibility that the United States could adopt a radically different approach to addressing the nuclear balance of power, and challenged the scientific and engineering communities to develop the means by which to accomplish it. It has come to be officially designated the President's "Strategic Defense Initiative"

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(SDI) and dubbed "Star Wars" by the press and others. Attendant with this philosophy are a number of critical and controversial issues. These have been discussed in depth without resolution, and continued heated discussion and controversy are expected in the years to come. Some of these issues focus on the physical capabilities and limitations of technology and the potentially massive personnel and economic costs related to the development of SDI; others center on ethics, morality, stability, and ultimately on US military strategy. This article will concentrate on the latter factors, while largely assuming the former.³ It will describe the political and philosophical genesis of the concept of SDI, present a brief synopsis of the Soviet threat which creates the need, and then describe the system and its theoretical objectives. An analysis of the potential effects of SDI on the development of strategy will precede some concluding judgments.

POLITICAL AND PHILOSOPHICAL BACKGROUND

Since the late 1940s the United States has adopted a number of so-called strategies, or declared policies, to describe the manner in which it would contemplate using its nuclear capability. From the earliest policy of massive retaliation, a spectrum of strategic thinking can be discerned which has included controlled response, flexible response, realistic deterrence, mutual assured destruction (MAD), strategic sufficiency, essential equivalence, and countervailing strategy. At the heart of each of these is a question of target emphasis, usually defined in terms of counterforce or countervalue.⁴ It is important to note that since the mid-1960s US nuclear policy has been heavily based on the assumption that it was technically and economically infeasible to develop an effective defense; when a defense was contemplated during the Nixon years, questions arose over its effects on stability, the arms race, the strategic balance, deterrence, etc. As a result, traditional deterrence theory has prevailed, based on the thought that the United States, even after suffering a Soviet

first strike, would retain a sufficient nuclear counterstrike capability to retaliate with a nuclear force of such magnitude that the Soviet Union could no longer function as a society. This threat, which essentially guaranteed the destruction of both the United States and the Soviet Union, would deter that first strike from ever occurring.

Two arms negotiations, resulting in the Anti-Ballistic Missile Treaty and SALT I, served to fortify this concept and essentially ensured the mutual vulnerability of the population centers of both nations. The ABM Treaty was ratified by the United States based on the conclusion that existing technology in 1972 did not offer the prospect of developing a sufficiently capable and cost-effective system (see endnote 3) without simultaneously encouraging the proliferation of offensive arms, while SALT I was ratified in the hope that mutually acceptable limitations on strategic offensive arms would result. (SALT II, which was never ratified, only put ceilings on the already excessively high level of strategic arms.)

This condition of mutual vulnerability and the threat of nuclear retaliation have thus guided US strategy and probably encouraged restraint over the past 40 years. However, Mr. Reagan no longer subscribes to the view that it is acceptable procedure to destine ourselves and our future generations to live

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under the constant threat of nuclear annihilation, nor the assumption that the United States retains a sufficient offensive nuclear capability to deter the Soviets. In other words, Mr. Reagan feels that the nature and capability of the threat have changed so dramatically over the past two decades that the underlying assumptions of our countervailing strategy may no longer hold.⁵

It is now the view of our national planners that the balance of power has altered to the extent that the United States can no longer be confident that after sustaining a Soviet first strike, its surviving nuclear capability will be able to fulfill its second-strike mission.⁶ Ever since ratification of the SALT I and ABM Treaties, the Soviets have continued to expand and improve their nuclear capabilities, both passive and active. The Soviets have deployed the only existing ABM system and are currently deploying new ABM missiles (SH-04/08) to replace the aging Galosh; they are increasing the total number of launchers to 100, the maximum allowed by the ABM Treaty; they are hardening the silos of their land-based ICBM force; they are apparently developing a rapidly deployable ABM capability; they have deployed (or are soon to deploy) a number of ground- and air-based air defense systems capable of attacking nuclear missiles; and they have constructed a new large phased array radar, the location and orientation of which has impelled the President officially to declare it a violation of the ABM Treaty. Also a potential violation of the ABM Treaty is their testing of a surface-to-air missile (the SA-12) against a ballistic missile of the SS-4 class. Moreover, the Soviets have continued to place considerable emphasis on their civil defense program.

In conjunction with these defensive measures, the Soviets have concurrently embarked upon an unparalleled offensive modernization program that severely threatens the survivability of our own offensive systems (i.e. our retaliatory capability). Since the ABM Treaty, the Soviets have deployed, or have in test and development, at least eight new strategic missiles; five new classes of ballistic missile submarines; a new strategic

bomber; and highly accurate multiple independently targetable reentry vehicles (i.e. MIRV nuclear warheads). They also have aggressively pursued laser, particle beam, and radio frequency wave technology for possible use as weapons with antiballistic missile and antisatellite (ASAT) applications. They also possess the world's only operational ASAT system. This list does not include the additional progress being made on short- and intermediate-range ballistic missiles and cruise missiles. All in all, the Soviets now have 1398 land-based ballistic missiles with over 6000 warheads (most being of the highly accurate MIRV variety), with a megatonnage that has increased threefold over its 1972 level, plus 1000 submarine-launched ballistic missiles with nearly 3000 warheads. One analysis suggests that the Soviets could destroy, given the targeting accuracy that is now possible, up to 95 percent of American ICBMs in a first strike using only a small portion of their own force.⁷ These developments essentially alter the balance in a disturbing manner; increasingly, the Soviets are seen to be preparing to ensure some level of survivability for their society while simultaneously developing offensive systems designed to allow for the possibility of a disarming first strike against the United States.⁸

Three factors can thus be seen to have influenced the formulation of a new strategy: first, a dissatisfaction with deterrence based on mutual vulnerability and the threat of offensive retaliation (combined with the view that such an offense-based deterrent, no matter how fearsome, may not last forever, with intolerable consequences for mankind);⁹ second, the growth of the Soviet threat; and third, the recent technological advances that have been made in many areas relevant to defense against ballistic missiles, which may overcome the technological limitations that played such an important role in influencing the United States to support the ABM Treaty in 1972.¹⁰

The SDI, at this point, after having successfully passed two critical scientific feasibility reviews,¹¹ and after the promulgation of two national security decision

directives,¹² is described as a major research effort to identify technologies applicable to the possible development of an effective defense against enemy ballistic missiles. It is a program to which considerable scientific and financial resources are being allocated, the objectives of which are to determine the feasibility of developing a survivable, effective (with an acceptable level of confidence), cost-effective system that will defend the United States and its allies from ballistic missile attacks. The defensive system need not be "leakproof," but it must be sufficiently impenetrable that it would make an enemy uncertain that he could deliver a disarming first strike.¹³

Current research on the SDI is intended to stay within the constraints of the ABM Treaty. Given positive results, however, and following close consultations with our allies, the United States intends to consult and negotiate as appropriate with the Soviet Union on how to proceed, pursuant to the terms of the ABM Treaty. As currently contemplated, if the essential requirements of survivability, effectiveness, and cost-effectiveness can be met, the SDI will develop into a layered system that will be able to attack enemy ballistic missiles throughout their flight trajectories, from launch to terminal flight. Without addressing details of weapon technologies, a four-layered approach using three basic sets of technologies (kill mechanisms, surveillance/target tracking, and battle management) is foreseen. Enemy missiles are to be attacked during their boost phase (whereby effective attack could only occur from sea- and space-launched platforms); the "bus" is attacked again during the post-boost phase (again, where attack would probably occur from space, though possibly from air or ground platforms); surviving re-entry vehicles/warheads would be attacked during the mid-course phase (when all the re-entry vehicles and decoys are released from the bus); and finally, the residual reentry vehicles would be attacked during the terminal phase (the traditional concept of ballistic missile defense, whereby reentry vehicles are attacked by ground-based systems on their

descent through the atmosphere toward their targets. Needless to say, these concepts have some severe implications for treaties, stability, and arms control. The stated objectives of SDI include the following:

- To deter enemy nuclear attacks based on defensive rather than offensive capabilities.
- To contribute to peace and stability in the world.
- To complement and support efforts to achieve equitable, verifiable arms reductions.
- To reduce radically the power and utility of offensive nuclear missiles.
- To guarantee mutual security with our allies.
- To stabilize the relationship between offensive and defensive arms.
- To smooth the transition to a period of greater stability with reduced reliance on offensive nuclear arms and enhanced ability to deter war, based on an increased contribution of nonnuclear defenses against offensive nuclear arms.
- To contribute, throughout all phases of SDI progress, to continued negotiations and diplomacy.
- To contribute to the ultimate evolution of a world free of nuclear arms.¹⁴

ANALYSIS

Although its objectives seem clear, its goals noble and undeniably attractive on the face, the SDI entails a number of related and valid issues which, if not properly addressed, could easily transform what may appear to be a desirable path to peace and security into one of instability and increased likelihood of Armageddon. Inherent within the context of SDI are the interrelated concerns of morality and ethics; level of effectiveness; clear identification of specific targets to be defended; effects on crisis stability; effects on our allies (particularly NATO); effects on current and future arms negotiations; and, probably most relevant, *perceptions* of SDI by the Soviets, our allies, and our public. These concerns, when fully considered, should then serve as a basis for the development of a coherent

strategy—something which has not yet become clearly evident. I shall attempt to elaborate on a few of these concerns, and relate them where possible.

The key issue is stability: Will SDI bring about a stable environment, one conducive to the eventual elimination of offensive nuclear weapons? This issue is largely dependent upon the system's overall effectiveness, the target areas being defended, and perceptions. It has been argued that unless the defense is perfect (i.e. no "leakage," 100-percent effective), it will encourage the enemy simply to intensify his efforts to deploy increasingly greater quantities of more capable offensive arms to ensure the availability of a sufficient number of systems to overwhelm the defense, thus further exacerbating the arms race and contributing to greater instability. On the other hand, if the defense were perfect, the enemy would then perceive itself to own an obsolete nuclear arsenal that could no longer credibly serve its deterrent role. Assuming also that it has no strategic defense comparable to that provided by SDI, this perceived lack of a credible deterrent could induce a feeling of vulnerability to the possibility of either a US first strike or political blackmail. As a result, a potential adversary, the Soviet Union, could feel compelled to preempt. Again, the result is instability.

From the US perspective, however, neither of these arguments is valid, for even if a less-than-perfect defense is deployed, it would create considerable uncertainty in the enemy's planning cycle should he desire to conduct a disarming preemptive strike (see endnote 13). Also, should he initiate a strike, even a less-than-perfect defense would probably allow far fewer warheads to penetrate, therefore limiting the damage (which doubtlessly would be considerable—perhaps devastating—even if only a few warheads penetrated). Theoretically, however, the lack of certainty regarding the successful launch of a disarming preemptive strike should suffice as deterrence. In the case of a perfect defense, the underlying question is whether the Soviets would risk global annihilation to keep from being potentially

dominated by the United States (Perhaps . . . a question of perception.) In either case, the former situation may in fact be the more stable of the two.

In addressing the related issue of SDI's effects on the arms race, certainly the Soviets could respond by significantly accelerating their offensive strategic programs, increasing the number, types (ballistic missiles, bombers, cruise missiles), and sophistication (countermeasures, penetration aids, exotic technologies, etc.) of their nuclear offense and defense. In this event, in my opinion, SDI may have contributed to greater instability and insecurity. This argument turns on the definition of cost-effectiveness, in which SDI is considered cost-effective only if it costs less to develop and deploy the SDI than it would cost to develop sufficient offensive arms and countermeasures to defeat the system.¹⁵ To help avoid the possible instability that could result, however, it will be necessary to pursue such diplomatic aspects as open dialogue, friendly relations, full knowledge of intentions, etc. Actions during this period of SDI's development will also play a critical role, for, to the Soviets, actions speak much louder than words.

Another contributing factor, and one that again affects perceptions, concerns the targets being defended. As long as a BMD defends missiles (as the name suggests), that defense sends a signal that the intent is to use one's missile force as a retaliation measure, and it must therefore be defended against a first strike. If, on the other hand, population centers are to be defended and missiles are left undefended, the signal is that the missiles do not need to be defended because they will not be there if an enemy attack should occur (suggesting a first-strike intent). The perception in such a case, then, is that the population is being defended from an enemy's retaliatory strike. The problem with SDI is that it can be used to defend both missiles and populations, thus denying an adversary key information regarding intent. Once again, this situation may be considered destabilizing by sending ambiguous signals that cannot be easily or unequivocally interpreted. Accurate warheads on missiles

further exacerbate this problem by suggesting point (counterforce) targeting of enemy missiles. Perhaps a way to ameliorate this situation is to install ground-based missile defenses as the first element of SDI, then, as other elements of SDI are developed, to reduce the offensive capability. Again, open dialogue is critical.¹⁶

The Soviets are fundamentally different from Americans in their politics, ideology, social system, the way they think about peace and security, and in their world outlook.¹⁷ The Soviets, as our primary adversary, will have the greatest effect on the extent to which a condition of stability or instability will result from SDI. Therefore, to assess the potential effectiveness of SDI as a new US strategy, it is critically important to understand how the Soviets perceive SDI and to correctly estimate how they will react to its implementation. To ignore the Soviet view, quite simply, is to invite disaster.

Shortly after President Reagan delivered his SDI speech, Yuri Andropov, then President of the Soviet Union and General Secretary of the Communist Party of the Soviet Union, responded by assessing the SDI as a means for the United States to "acquire a first strike capability," and as a "bid to disarm the Soviet Union" by securing the possibility of destroying Soviet strategic systems and rendering the Soviet Union incapable of dealing a retaliatory strike.¹⁸ Given its source, this statement should not be taken lightly. It clearly indicates that the Soviet Union views SDI to be offensive in nature and designed to support US strategic supremacy. It is not at all surprising that the Soviets should view SDI with such trepidation. They have considerable respect for US capabilities and technological potential, and they are probably confident that if the United States mobilizes its resources, it can be successful in developing an effective program. However, they also perceive the United States as a fundamentally aggressive, imperialist nation, one that has been hostile to the Soviet Union and has made every effort to retain a position of supremacy. They see the United States as the only nation that has employed nuclear weapons offensively (with

Hiroshima and Nagasaki defined not as targets to end World War II but rather as signals designed to intimidate the Soviets), and they assess the Baruch Plan as one to ensure the US nuclear monopoly. Furthermore, the creation of NATO is perceived as yet another indication of US hostility. These negative perceptions are not likely to change.

Given that SDI is being developed concurrently with MX, B-1B, Pershing II, cruise, stealth, and the space shuttle, one cannot help but understand that to the skeptical observer, the US development of SDI could be perceived as a system to establish US supremacy and a first-strike capability. To the Soviets, SDI fits a first-strike category, and they firmly believe it to be a threat.¹⁹ Therefore it would not be presumptuous to assume that the Soviets will take whatever steps they feel are necessary (indeed, they have said they could and would) to ensure retention of a credible retaliatory capability and to undermine SDI. Their means would probably include overt diplomacy, active measures, and development of greater quantities of more sophisticated strategic military equipment. Also, they will likely redouble their efforts to obtain better defensive capabilities, and it would not be surprising, failing all else, to see the Soviets take some military or paramilitary actions against critical elements of SDI before the entire system becomes operational.²⁰

Since the Soviet perception of SDI is so negative, the United States will have to make every effort to maintain an open, honest, and factual dialogue with the USSR if we hope to avoid creating instability. It will not be easy for them to accept this new strategy, nor, given many past US actions, is it likely that the United States will easily dispel Soviet suspicions. There will have to be tradeoffs between offense and defense. If pursuit of defense could possibly become mutually beneficial, then perhaps there is a chance for a more stable strategic relationship. It is clear, however, that the success of SDI as a military strategy must be inextricably linked to both the political and psychological instruments of power.²¹

Our allies have raised some concerns regarding the SDI program. Despite US pronouncements of its deep commitment to the defense of NATO, its support of the existing NATO strategy of flexible response, and its assurance that the technology of SDI will also be available to protect our allies from ballistic missile attacks (including short- and intermediate-range ballistic missiles), some allies still have reservations. NATO nations view the potential of SDI as a weakening of the US commitment to provide Europe with a nuclear umbrella which inextricably links the security of the United States to that of Europe. To the Europeans, SDI inherently possesses the potential to decouple the defense of West Europe from that of the United States.

Moreover, West Europe still remains vulnerable to a variety of threats other than ballistic missiles, with the balance largely favoring the Warsaw Pact. A common NATO perception is that given a successful Pact invasion, the United States, while hiding behind the protection of its SDI, might be reluctant to escalate to nuclear warfare in order to save West European territory. To the Germans, deterrence in Europe can be maintained only if there is a shared US-European risk, and they see in SDI a willingness to "trade space for time" (i.e. a rejection of flexible response) which, to the Germans, is totally unacceptable. From this perspective, then, SDI has a decidedly destabilizing effect.

Potentially exacerbating this problem is the possibility that the Soviet Union, to compete with the United States, will also develop an effective strategic defense. (They are now known to be working on a strategic defense program.) Were this to happen, the Pershings now in Europe, along with the independent nuclear capabilities of both the UK and France, would no longer represent credible threats to the Soviet Union. As such, SDI will have essentially nullified the strategic nuclear capabilities of our allies and caused their de facto disarmament. The result could be a war fought in Europe, in which all of Europe is destroyed while both the United States and the Soviet Union remain unscathed (each withholding its ICBMs due to the

other's defense). Thus deterrence and the credibility of nuclear retaliation are both undermined.

It almost goes without saying that SDI cannot (must not) proceed in isolation, and must progress only concurrent with frank, open, honest, factual, balanced dialogue and negotiations—with our allies as well as our adversaries. Although the theory and declared intent behind SDI seem logical and moral, considerable potential exists for SDI quite simply to encourage greater instability and increased risk of war rather than ensuring the peace and security that are identified as its goals.

Arms control negotiations represent the only effective means by which to manage a transition to a defense-reliant deterrent strategy. The United States has offered to discuss the implications of defensive technologies with the Soviet Union and has stipulated that its research is consistent with the ABM Treaty. Both are positive steps. We intend to consult and negotiate pursuant to the terms of the ABM Treaty. As this treaty is widely held in high esteem by our allies and many senior US policymakers as a necessary element of deterrence, unilateral abrogation would probably be unwise from both a political and psychological standpoint. Meanwhile, SDI can work only if an offensive arms race is not stimulated. Every effort should be made to pursue radical arms reductions. To cause an acceleration in offensive arms production and deployment can only be counterproductive, and every effort should be made to reduce rather than increase this risk. The goal is to pursue balance on both sides—not superiority. Strategic, long-term stability can exist only if security is enhanced on both sides. Cooperation is desirable, and the United States must remain attuned to, and sympathetic with, the Soviet perspective; likewise, the Soviet leadership must do the same in their dealings with the United States. Overall, it will be actions, rather than words, that will determine the final outcome and affect the tenor of negotiations.²²

Before concluding, one final consideration needs to be addressed with regard to SDI: its ethical and moral justification.

Critics of SDI have attacked it as being an unsound, unethical policy, while proponents argue the opposite. One should bear in mind, however, that for 40 years deterrence has relied on offensive threats that could lead to global annihilation. It is my opinion that although SDI holds considerable potential to contribute to instability in an already precarious world, it also holds the possibility that offensive nuclear weapons could be rendered obsolete. Certainly SDI should be considered no less moral or ethical than the extant policy of mutual assured destruction. Perhaps final judgment on the ethics of SDI should be delayed until we can assess the manner in which it is pursued by the United States and until we see some positive (or negative) results. Should SDI lead to its ultimate goal, then indeed it would be a morally and ethically correct choice.²³

CONCLUSION

Obviously there are many serious and complex issues associated with the prospect of developing a highly effective system to defend against ballistic missiles. Most important among these is the effect that deployment of an SDI will have on global stability. SDI may not be the right or sole answer to the threat of nuclear holocaust, but what is apparent now is that offensive nuclear arsenals are reaching absurdly high levels and arms control negotiations have not been successful in effectively altering this course. SDI represents a potential solution. It is too early in the research phase of SDI to draw any unequivocal conclusions regarding the efficacy of SDI as the correct future strategy for the United States, but some observations may help put the issue into perspective.

We currently live under the threat of nuclear annihilation and have no means to deter our primary adversary except to offer him a comparable threat of nuclear annihilation. Over the past 40 years, nuclear war has not broken out—perhaps the threat of retaliation works. But what happens if our retaliatory capability ceases to be a credible deterrent? The Soviets over the past 20 years

have deployed third and fourth (and are testing fifth) generation strategic missiles, increased their nuclear yields to twice the US level, significantly improved their targeting capabilities, and increased by 300 percent since the ABM Treaty the number of warheads capable of destroying hardened targets. Simultaneously they have spent roughly the same amount of money on defensive measures as they have on offense (the Moscow ABM system, mobile missiles, defensive radars, civil defense, super-hardened silos, new generations of air defense interceptors and surface-to-air missiles, etc.).

As for deterrence, it has become increasingly questionable whether the United States would retain a credible second-strike capability against the Soviets after suffering a Soviet preemptive strike against our own land-based missiles (all of which are in fixed sites and lack defenses) and bomber airfields. (Survivability of the submarine force, at least for the time being, is less in question, but SLBMs are slower, less accurate, and more vulnerable to defensive measures than are ICBMs.)

Coupled with the changing nature of the threat is the realization that technology may also have changed radically enough to make possible the construction of effective defenses. While not necessarily ensuring a reduction in the threat of offensive missiles, it at least holds the promise for a future in which perhaps a better balance between offense and defense can develop, thus making the world that much safer.

Many potentially destabilizing influences also must be considered. Among these are perceptions by the Soviets that the United States may be interested in developing a first-strike capability and perceptions by our allies that the United States may be reducing its nuclear commitment to their defense. The spectrum of potential reactions could certainly be most enlightening: We could see ourselves embroiled in another offensive arms race, or in a defensive arms race; we even could see the Soviets chance a preemptive strike. On the other hand, we could

see peace and cooperation (although this is doubtful given Soviet perceptions of the United States).

Stability could be reinforced. Targeting uncertainty could deter the Soviets from initiating an attack. Negotiations resulting in a mutually agreeable balance between offense and defense could result. Even if only a limited-capability defense were emplaced, it could provide adequate protection from accidental nuclear releases or limited attacks. These are all enormous improvements over what we have now. The most stable situation would be one in which both the United States and the Soviet Union deployed comparable defensive systems simultaneously, then began to eliminate their offensive nuclear weapons.

Whatever final judgments are made with regard to SDI, it should be kept in mind that no single policy or technological achievement will ever lead to a total abolition of the potential for strife and conflict. Strategic defense, in and of itself, will not solve the fundamental problems of the political rivalry that exists between the United States and the Soviet Union. SDI holds the promise of possibly finding a safer way to work out our differences—it also holds the possibility of exacerbating those differences. To enhance the prospect of stability, SDI must be closely tied with an effective dialogue and associated arms control agreements. We must now also develop a military strategy to harness the potential offered by SDI while we continue to pursue political and psychological means to understand each other better and to develop agreements that are mutually beneficial, as well as beneficial for the world. Meanwhile, SDI, in the long run, at least holds out the possibility of transforming, though not transcending, the US-Soviet deterrence relationship: thus it should be pursued, but with caution and due deliberation.²⁴

NOTES

1. Robert Jastrow, *How to Make Nuclear War Obsolete* (Boston: Little, Brown, 1985), p. 72.
2. Ronald Reagan, televised address, 23 March 1983.
3. For purposes of this paper, both the ability of science and technology to develop an effective, survivable system and

the question of cost-effectiveness will largely be assumed. The rationale for this is that it is unlikely that science soon will resolve the issue of feasibility. As in the past with other technological advancements (Einstein did not believe that nuclear energy could be harnessed), there are as many brilliant, well-reasoned, credible scientists who believe that a system can be developed as believe otherwise. To continue a discussion of SDI on strategy, we must assume that the system exists to evaluate its potential effects. Likewise, one of the constraints imposed upon SDI by the President is that it be "cost effective at the margins," i.e. it must cost less to develop and deploy the SDI than it would cost to develop sufficient offensive arms and countermeasures to defeat the system. Therefore, if the system is not cost-effective, it will not undergo development, and further argument on SDI is moot.

4. Robert Kennedy and John M. Weinstein, eds., *The Defense of the West: Strategic and European Security Issues Reappraised* (Boulder, Colo.: Westview Press, 1984), p. 243. Counterforce targeting refers to the targeting of the enemy's nuclear delivery means. Countervalue targeting refers to targeting the enemy's population and economic centers. The current strategy is "countervailing," which emphasizes counterforce targeting but also includes the targeting of war-supporting industries, recovery resources, and political power structure while retaining an "assured destruction" capacity in reserve.

5. Department of State, "Strategic Defense Initiative," *Current Policy*, 7 March 1985.

6. *Ibid.*

7. Lewis E. Lehrman, "The Case for Strategic Defense," *Policy Review*, No. 31 (Winter 1985), p. 44. See also Department of Defense, *Soviet Military Power—1985*, 4th ed., April 1985, pp. 25-59; and Paul H. Nitze, "SDI: The Soviet Program," *Current Policy*, 28 June 1985, for good, detailed assessments of the Soviet offensive nuclear and strategic defensive capabilities.

8. "Disarming" refers to the ability of one side to conduct an initial strike of such precision and effectiveness that the other side's remaining nuclear force would not represent a credible retaliatory threat.

9. Keith B. Payne and Colin S. Gray, "Nuclear Policy and the Defensive Transition," *Foreign Affairs*, 62 (Spring 1984), 820.

10. Paul H. Nitze, "SDI and the ABM Treaty," *Current Policy*, 30 May 1985, p. 2; Richard C. Gross, "Arms Control: A New Lever," *Defense Science & Electronics*, 4 (February 1985), 12; also, refer to note 3 as regards discussion on technology.

11. These are the Defense Technologies Study Team (headed by James Fletcher) and the Future Security Strategy Study (headed by Franklin Miller and Fred Hoffman). The results of both found that emerging technologies held promise for strategic defense, and that research should be conducted toward that end. Bruce L. Valley, "The Ultimate Defense," *Proceedings*, 111 (February 1985), 32.

12. These are NSDD 6-83, which mandated the examination of technology that could eliminate the threat posed by ballistic missiles; and NSDD 119, which authorized an expansive research program to demonstrate the technical feasibility of intercepting attacking enemy missiles. Payne, p. 821.

13. Since neither the United States nor its allies have any BMD whatsoever, there currently exist no such uncertainties in the Soviet calculus. Accordingly, the enemy can know in advance (within a fair degree) what amount of force it will need to achieve a particular level of destruction. The vulnerability of the US ICBMs to a Soviet first strike was recognized by the

1983 Scowcroft Commission Report, and indeed, this situation is in defiance of Clausewitzian theory which emphasizes the interworking of offense and defense and the fact that differences exist between the plan (paper war) and reality. Clausewitz says, "Everything in war is simple, but the simplest thing is difficult." He uses the term "friction" as the force which causes difficulties and ensures that nothing will go entirely according to the plan, and introduces the concept of uncertainty. When defenses are entered into the strategic equation, the enemy's level of certainty must concomitantly drop. This, therefore, removes from him the advanced knowledge of whether his attack will be successful (thus, theoretically, discouraging the attack in the first place).

14. Harold Brown, et al., "The Strategic Defense Initiative," *Essays on Strategy and Diplomacy*, No. 3 (May 1985), pp. 34-36; and Office of the President of the United States, *The President's Strategic Defense Initiative*, January 1985.

15. According to one study, even if a four-layered defense were 80-percent effective in each of its layers, the Soviets, to be assured of achieving an appropriate level of damage on a first strike, would have to increase their current number of missiles fivefold, at a cost approaching two trillion dollars. Jastrow, p. 128.

16. An excellent discussion of the issue of crisis stability can be found in Robert Kennedy and John M. Weinstein, eds., *The Defense of the West: Strategic and European Security Issues Reappraised* (Boulder, Colo.: Westview Press, 1984), pp. 167-75.

17. Although we both may have a common desire for peace and security, our definitions remain different: For the United States, peace may be the "absence of war and relaxation of tensions" with the Soviets. In contrast, for the Soviets, peace "implies a movement to the condition when

worldwide victory of socialism has made war obsolete." James D. Watkins, "The Strategic Defense Initiative: Keeping Teeth in the Policy of Deterrence," *Defense/85* (March 1985), p. 18.

18. Frank von Hippel, "Attacks on Star Wars Critics a Diversion," *Bulletin of the Atomic Scientists*, 41 (April 1985), 10.

19. John Judge, "The Strategic Defense Initiative and Arms Control," *Defense Electronics*, 17 (March 1985), 96.

20. William E. Burrows, "Ballistic Missile Defense: The Illusion of Security," *Foreign Affairs*, 62 (Spring 1984), 844; Sidney D. Drell, Phillip J. Farley, and David Holloway, "Preserving the ABM Treaty: A Critique of the Reagan Strategic Defense Initiative," *International Security*, 9 (Fall 1984), 304; Von Hippel, p. 10; and McGeorge Bundy, et al., "The President's Choice: Star Wars or Arms Control," *Foreign Affairs*, 63 (Winter 1984/85), 266-67.

21. There is no intent here to ignore the significance also of the economic instrument. Clearly given the spiraling costs for offense and defense—for all parties concerned, including our allies—the importance cannot be overstated. Indeed, pursuit of the technologies necessary for developing an effective SDI or for accelerating the arms race (as a potential response) could virtually bankrupt some countries.

22. Consideration must also be given to the Space Treaty, SALT I, and SALT II (even though unratified). Further information on the relationship of SDI and arms control negotiations may be found in Drell; Judge, p. 104; Department of State, "The Strategic Defense Initiative," Special Report 129, June 1985, p. 3; and Nitze, pp. 2-3.

23. Refer to Department of State, Kenneth L. Adelman, "SDI: Setting the Record Straight," *Current Policy*, 7 August 1985, p. 3.

24. Payne, p. 842.

